



BRANZ Appraised

Appraisal No. 790 [2019]

SERATONE WALL AND CEILING LININGS

Appraisal No. 790 [2019]

This Appraisal Replaces BRANZ Appraisal 790[2012].



BRANZ Appraisals

Technical Assessments of products for building and construction.

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Product

- 1.1 This Appraisal relates to Seratone Wall and Ceiling Linings, which are pre-finished panels of oil-tempered hardboard.

Scope

- 2.1 Seratone has been appraised for use as non-bracing wall and ceiling lining systems in new or existing buildings, for the following: wet areas such as bathrooms where moisture-resistant materials are required; areas where hygiene is of particular importance and easy-to-clean surfaces are required; and other areas where low maintenance pre-finished wall and ceiling lining systems are specified.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 **In the opinion of BRANZ, Seratone, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:**

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. Seratone meets the requirements for loads arising from self-weight and impact [i.e. B1.3.3 (a) and (j)]. See Paragraphs 9.1 - 9.3.

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years, and B2.3.1 (c), 5 years. Seratone meets this requirement. See Paragraphs 10.1 and 10.2.

Clause E3 INTERNAL MOISTURE: Performance E3.3.4, E3.3.5 and E3.3.6. Seratone meets or contributes to meeting these requirements. See Paragraphs 14.1 and 14.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Seratone meets this requirement and will not present a health hazard to people.

Clause G3 FOOD PREPARATION AND THE PREVENTION OF CONTAMINATION: Performance G3.3.2 (a) and (b). Seratone will contribute to meeting this requirement. See Paragraph 15.1.

Product Information

Description

Seratone Panels

- 4.1 Seratone panels are pre-finished wall and ceiling panels manufactured from oil-tempered hardboard with factory sealed edges.
- 4.2 The panels are provided with two different types of finishes:
 - **Seratone Life:** These panels have a 140 micron multi-layered paint system which is fully cured using UV light. The palette is a range of neutral colours with a gloss or satin finish.
 - **Seratone Escape:** These panels have a 220 micron multi-layered paint system which is fully cured using UV light. They are available in a range of colours.
- 4.3 Seratone Life and Escape are suitable for use in wet areas. Details of finishes and colours are available from the manufacturer.
- 4.4 The panels are 4.5 mm thick, 2400 x 900 mm, 2400 x 1200 mm or 2700 x 1200 mm in size, and have rounded edges which are covered with tape for temporary protection. The panels are manufactured to the following tolerances:
 - length and width, ± 2.0 mm;
 - thickness, ± 0.5 mm.
- 4.5 On the back of the panels is a label giving the product type, pattern and colour, production date and batch number.

Accessories

- 4.6 Accessories used with the Seratone system that are supplied by Laminex New Zealand are:
 - **Seratone jointers** - these are aluminium for joining of the Seratone panels. There are two types of aluminium jointers, these being Professional and Standard.
- 4.7 Accessories used with the Seratone system that are supplied by others are:
 - **Wallboard adhesive** - as per the Technical Literature or any construction adhesive appraised by BRANZ for use with Seratone.
 - **PVC mouldings** - these are PVC mouldings for joining of the Seratone panels in accordance with the Technical Literature.
 - **Silicone sealant** - silicone sealant that is used for sealing around the panels as defined in the Technical Literature.
 - **Double sided tape** - double sided foam tape used for adhering Seratone panels to a framing.

Handling and Storage

- 5.1 Seratone panels are supplied for shipping strapped on pallets overwrapped with a waterproof covering.
- 5.2 Long-term storage of Seratone panels must be under cover away from direct sunlight to avoid fading, on evenly spaced bearers to keep them flat and dry. When stored outside, panels must be covered with breather-type waterproof material in a manner that allows air to circulate around the stack. Panels must be lifted and not dragged off the stack.

Technical Literature

- 6.1 Refer to the Appraisal listing on the BRANZ Website for details of the current Technical Literature for Seratone. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained within the scope of this Appraisal and the Technical Literature must be followed.

Design Information

General

- 7.1 Seratone Life and Escape wall and ceiling linings are impervious to moisture and are resistant to water, steam, typical hygienic cleaning chemicals and materials, and abrasion. The panels are primarily intended for use as wall or ceiling linings in wet areas such as bathrooms and kitchens. The panels are also intended for use in food processing areas, where the Building Code and health regulations require the use of water and chemical-resistant lining materials which are impervious, easily cleaned and maintained, and are capable of withstanding demanding hygienic cleansing operations. In wet and food processing areas, it is essential that the edges of the panels are sealed and sealant must be used with jointers to ensure joints are impervious to moisture.
- 7.2 The systems may also be used in other areas to provide decorative pre-finished linings with a low maintenance requirement. The linings must not be used in areas listed in Acceptable Solution G3/AS1 Paragraph 2.2, such as electroplating and lead processing areas, or mortuaries.

Installation Information

- 7.3 The panels can be fixed directly over:
- new wall and ceiling timber framing;
 - existing wall and ceiling timber framing after removal of existing linings;
 - existing timber frame wall and ceiling linings;
 - battens which have been fixed to strapping covering new or existing concrete and masonry walls;
 - new or existing plasterboard;
 - new or existing fibre cement sheet.

The panels should not be installed over existing wet area linings.

- 7.4 To complete the lining system, a combination of proprietary aluminium jointers and adhesives may be used to hold the panels in place. Alternatively, a combination of jointers, adhesives, and conventional painted timber-based cornice and skirting mouldings appropriate for the exposure may be used. When used with silicone sealant, the jointers are also intended to form moisture impervious joints [see the Technical Literature for more detail].
- 7.5 Detailing at shower trays must be either in accordance with the requirements of Laminex New Zealand and Acceptable Solution E3/AS1, or an alternative method meeting the requirements of NZBC E3.
- 7.6 Joints between baths, basins, tubs, and the linings must be in accordance with the requirements of Laminex New Zealand and Acceptable Solution E3/AS1, or to another method meeting the requirements of NZBC E3. Nails must not be used to fix the panels in place. Wall fixtures must only be fixed directly to the underlying supports. In all applications, continuous support must be provided at all sheet edges, including around 'cut-outs' for plumbing fixtures and other services. The exception to this rule is where the sheet has a drip edge along the bottom. The sheet must still be supported at the specified distance above the drip edge.

Wet Areas

- 7.7 Wet areas are spaces where sanitary fixture and sanitary appliances are located such as bathrooms, toilets, laundries and kitchens. There are two general categories of wet areas as follows:
1. Water Splash - These are areas subject to intermittent splashing of water such as around baths, vanities, tubs and sinks.
 2. Shower Areas - These are areas subject to frequent and heavy splash such as enclosed showers, unenclosed shower zones and showers over baths.
- 7.8 Seratone Life and Escape panels may be used in both the wet area categories described above. Installation of the panels on these areas must be in accordance with the Technical Literature.

Timber framing and supports

- 7.9 When fixed directly over new or existing wall framing, supports must be at 600 mm maximum

centres. Nogs or dwangs must be at 600 mm maximum centres. In all buildings, timber framing for walls and ceilings must have a moisture content of less than 18%. Ceiling battens must be at 400 mm maximum centres. Battens must be a minimum of ex 50 x 50 mm, or 70 mm X 40 mm, machine gauged, H1.2 treated timber, and kiln dried to a moisture content of less than 18%.

- 7.10 Existing timber wall and ceiling framing must be sound, and free of borer (or similar insect infestations), and decay. Damaged framing must be replaced.
- 7.11 Care must be taken with the layout of all framing and supports, in order to ensure that framing timber will be at appropriate positions for the fixing of jointers. Around shower trays, baths, and spas, timber battens or packing must be a minimum of H1.2 preservative treated.

Concrete and masonry substrates

- 7.12 Existing concrete and masonry substrates must be sound, sealed, and capable of holding the fixings for strapping. New concrete and masonry substrates must also be sealed. Strapping must be spaced at maximum 600 mm vertical centres, and battens at maximum 600 mm horizontal centres. Strapping must be a minimum of H1.2 treated, sized as for ceiling battens, and fixed with 75 mm concrete / masonry nails at 300 mm maximum centres.

Other Materials

Jointers and Mouldings

- 8.1 In wet areas, the long-term integrity and serviceability of wall lining systems based on Seratone depend on the quality of the jointing systems specified and installed. Aluminium jointers or PVC mouldings selected for use by the designer or installer must form impervious joints, e.g. as described in Acceptable Solution E3/AS1 Paragraph 3.2.4 [a].

Wallboard adhesives

- 8.2 Sheets must be fixed with wallboard adhesives recommended by Laminex New Zealand.

Structure

Mass

- 9.1 The mass of Seratone panels is approximately 4.4 kg/m².

Bracing

- 9.2 Seratone wall and ceiling linings have not been appraised for bracing applications.

Impact

- 9.3 Seratone panels will withstand typical soft body impacts normally expected in areas where the product will be used. The panels will be damaged by hard body impacts such as hammer blows. The possibility of impacts damaging panels must be considered at the design stage, especially in public, institutional, or educational buildings which are prone to robust behaviour or vandalism. The manufacturer must be consulted for advice on a suitable means of providing protection in these buildings. In hygiene areas, the surface finishes must also be protected from likely impact, and not be subject to chipping in order to comply with Acceptable Solution G3/AS1, Paragraph 2.1.4.

Durability

- 10.1 With normal maintenance, wall and ceiling lining systems based on Seratone panels will meet the performance requirements of NZBC B2.3.1 [b], 15 years, when used in shower areas, and NZBC B2.3.1 [c], 5 years, in other areas, as given in Table 1 of Acceptable Solution B2/AS1.

Serviceable Life

- 10.2 If properly maintained, Seratone wall and ceiling lining systems will remain serviceable for at least 15 years when used in any building area covered by this Appraisal. This statement assumes that panel edges and reverse faces have been protected as specified in the Technical Literature, and that mouldings and flanges to wall mounted plumbing or sanitary fixtures are detailed to minimise the passage of moisture behind the panels, especially in critical areas such as around baths, shower trays, wash basins, and sinks. This statement also assumes that nails have not been used to fix the panels in place in wet areas.

Maintenance

- 11.1 Cleaning must be carried out using a soft cloth lubricated with non-abrasive mild detergent or soap solutions. Solvents or abrasive materials must not be used. See the Technical Literature for more information.
- 11.2 Mouldings or flashings used around baths, shower trays, wash basins, or sinks must be maintained in a serviceable condition in order to ensure joints are impervious to moisture. Adhesive tapes must not be applied to the surfaces of Seratone panels.

Prevention of Fire Occurring

- 12.1 Separation or protection must be provided to Seratone Panels from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

Control of Internal Fire and Smoke Spread

- 13.1 Seratone Escape and Seratone Life have been tested in accordance with ISO 5660 and have a Group Number of 3. Refer to Table 4.1 of NZBC Acceptable Solutions C/AS2 to C/AS6 to determine where Seratone Escape and Seratone Life may be used according to their Group Number. If an applied finish is used over Seratone Escape or Seratone Life, the Group Number must be obtained from the manufacturer or supplier of the finish product or system, for the complete lining system. There is no internal surface finish requirement for Seratone Escape or Seratone Life when they are used in buildings with a SH Risk Group classification.

Internal Moisture

- 14.1 Seratone panels are impervious to moisture, and can be easily cleaned.
- 14.2 Seratone panels can be used to form modular or multiple lining systems meeting the requirements of NZBC Acceptable Solution E3/AS1, Paragraph 3.1.2 [h].

Food Preparation and Prevention of Contamination

- 15.1 Seratone wall and ceiling lining systems, when installed in accordance with the requirements of this Appraisal and the Technical Literature, are suitable for installing next to appliances and facilities as specified by NZBC Acceptable Solution G3/ AS1, Paragraph 1.6 for wall linings in domestic facilities, and Paragraph 2.1.5 for wall linings in commercial and industrial facilities.

Energy Efficiency

- 16.1 When carrying out thermal design calculations on the building envelope, the R-value of Seratone may be taken as 0.03 m² °C/W [excluding surface resistances].

Installation Information

General

- 17.1 Installation must be in accordance with the instructions given in this Appraisal and the Technical Literature.

Preparation

- 17.2 Existing linings may be removed or, if sound, retained. Seratone panels should not be installed over existing wet area linings. If the linings are removed, damaged framing must be replaced and vertical supports provided at maximum 600 mm centres where they do not exist, and dwangs at maximum 600 mm centres. Seratone sheets that are 900 mm wide will require vertical supports at 450 mm centres.
- 17.3 Sealed concrete and masonry surfaces must be covered by a grid of supporting strapping and battens.
- 17.4 All supporting substrates [new framing and battens, or existing framing and linings] must form a basis for providing a true and level surface for the lining system. The procedures for fixing the



linings are the same for both new and retro-fitting applications.

- 17.5 In wet and food processing areas, after removal of the tape, all edges [including new edges created by cutting panels to size or to form holes] must be completely sealed as instructed by the panel manufacturer in the Technical Literature.

Fixing of panels

- 17.6 Panels must be fixed in place in wet and food processing areas with joints formed by suitable aluminium jointers or plastic mouldings sealed with sealant. Sealant only joints are also acceptable. Recommended adhesives and sealants are given in the Technical Literature.
- 17.7 In dry areas, panels may also be fixed in place with adhesive and plastic mouldings or aluminium jointers.
- 17.8 Installation of the Seratone panels must be carried out in accordance with the instructions in the Technical Literature. Specific information is given for installations around showers and baths.

Basis of Appraisal

The following is a summary of the technical investigations carried out.

Tests

- 18.1 The following testing has been carried out on Seratone by BRANZ:
- water absorption and thickness swell;
 - impact resistance in accordance with ASTM D1037;
 - water vapour permeability according to ASTM E96;
 - Glossard gloss;
 - cross hatch adhesion;
 - abrasion resistance;
 - heat resistance;
 - Gardner scrub resistance;
 - water resistance;
 - steam resistance; and,
 - stain and chemical resistance.
- 18.2 The following testing has been carried out on Seratone by others and the results have been assessed by BRANZ:
- ISO 5660 testing;
 - modulus of rupture;
 - modulus of elasticity;
 - shear strength [in-plane of panels]; and
 - internal bond.

Other Investigations

- 19.1 A durability opinion has been provided by BRANZ technical experts.
- 19.2 The use of pre-finished hardboard panels as wall and ceiling linings over many years both in New Zealand and overseas has been noted.
- 19.3 Site inspections of Seratone lining systems have been carried out by BRANZ.

Quality

- 20.1 The manufacture of the Seratone panels has been examined by BRANZ and found to be satisfactory.
- 20.2 Quality of materials, components and accessories supplied by Laminex New Zealand is the responsibility of Laminex New Zealand.
- 20.3 The quality of installation on site of components and accessories supplied by Laminex New Zealand is the responsibility of the installer.



Sources of Information

- ASTM D1037:99 Test methods of evaluating of the properties of wood-base fibre and particle panel materials.
- ISO 5660 Reaction-to-fire tests - Heat release, smoke production and mass loss rate.
- NZS 3604: 2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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14 June 2019

SERATONE WALL AND CEILING
LININGS



In the opinion of BRANZ, **Seratone Wall and Ceiling Linings** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Laminex New Zealand**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the Technical Literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. **Laminex New Zealand**:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions;
 - d) warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by **Laminex New Zealand**
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Laminex New Zealand** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

14 June 2019